IoT einfach gemacht

für gängige Geschäftsprozesse

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Internet of Things Applications

50
Billion devices by 2018

8
Zeta bytes of data today

$3
Trillion market by 2020

IoT is at the top of the Hype Cycle

< 1%
of data in digital universe is analyzed today [1]

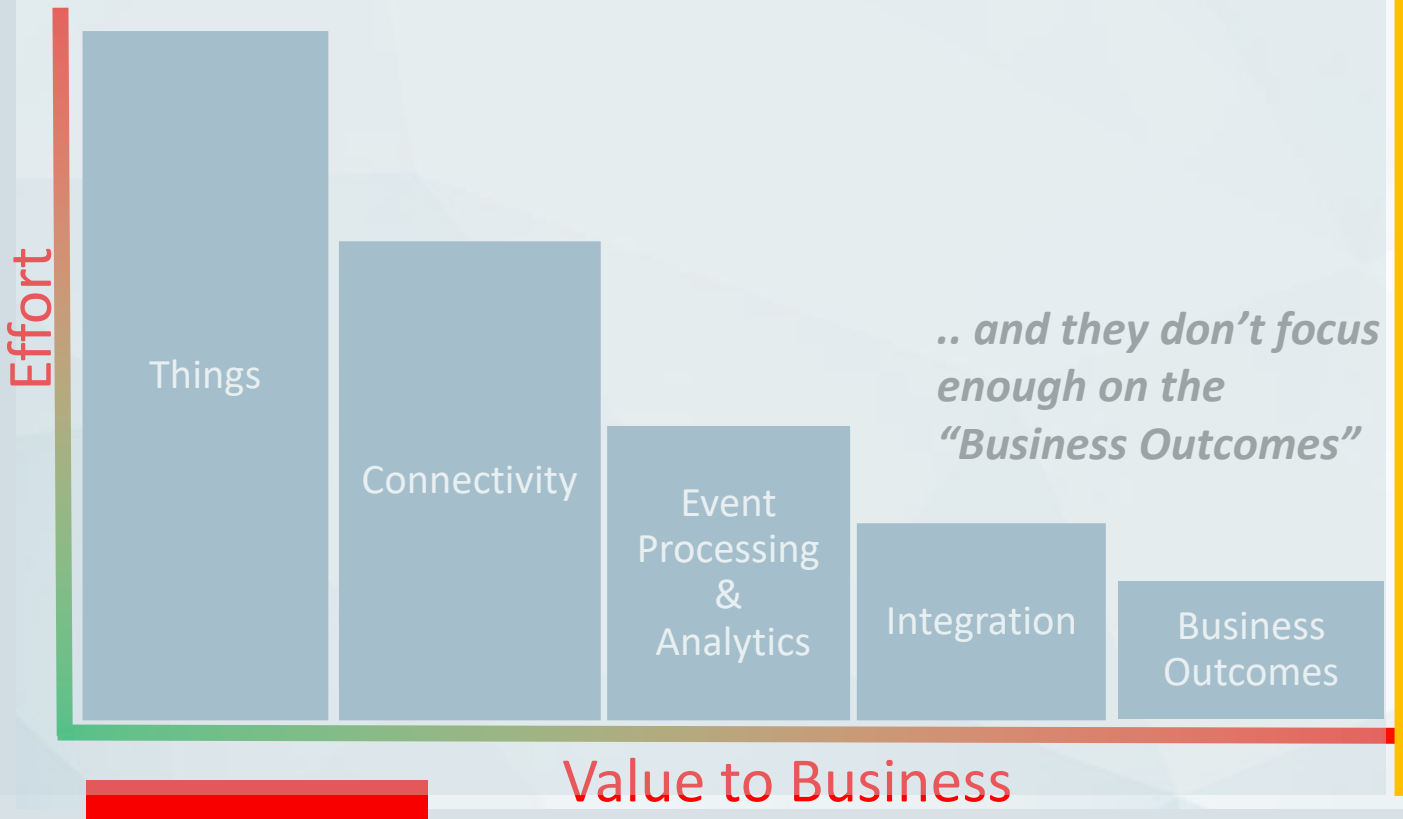
60 %
of IoT projects fail [2]

Why is IoT this hard?
1. Lack of clarity
2. Where do I start?
3. Ambiguous ROI

1. https://www.emc.com/collateral/analyst-reports/idc-the-digital-universe-in-2020.pdf
2. https://newsroom.cisco.com/press-release-content?articleId=1847422

Success with IoT Projects

Many IoT projects fail because they focus too much on "Internet" and "Things", …



.. and they don't focus enough on the "Business Outcomes"

Oracle IoT Strategy

We make IoT <u>Easy</u> to drive <u>Business Outcomes</u>

IoT*ify* your Business Applications

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Oracle IoT Applications enable the Digital Thread
By making IoT signals actionable

Detect

Track movement
Read temperature
Gauge humidity
Sense vibration

Device Signals

Decide

Determine lateness
Detect overheating
Predict failures
Update parameters

Business Events

Act

Reroute shipments
Replan supply
Dispatch service
Substitute materials

IoT Devices

- Building Sensors
- Equipment
- Logistics
- Mobile Devices

IoT Cloud Applications

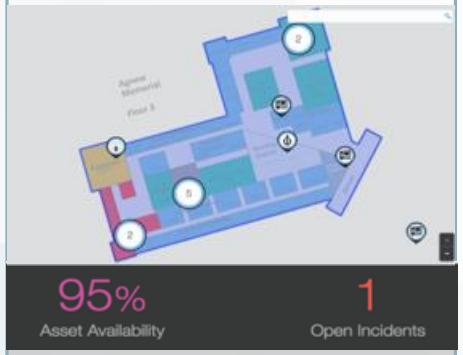
- Asset Monitoring
- Production Monitoring
- Fleet Monitoring
- Connected Worker

SCM Cloud

- Maintenance
- Manufacturing
- Transportation Mgmt
- Warehouse Mgmt

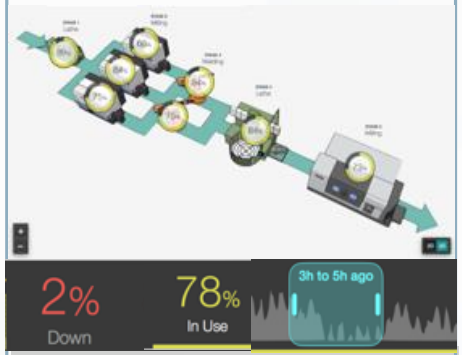
Oracle Internet of Things Cloud Applications

Asset Monitoring



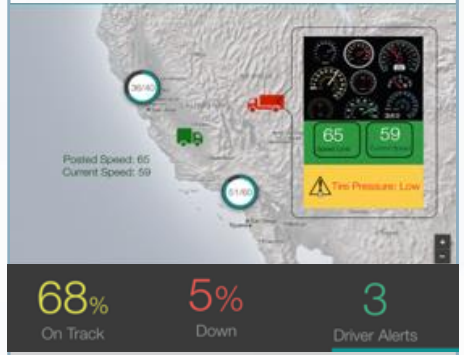
Monitor assets, their health, utilization & availability

Production Monitoring



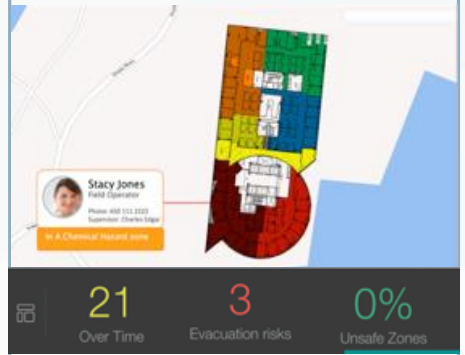
Manufacturing equipment & production line monitoring & prognostics

Fleet Monitoring



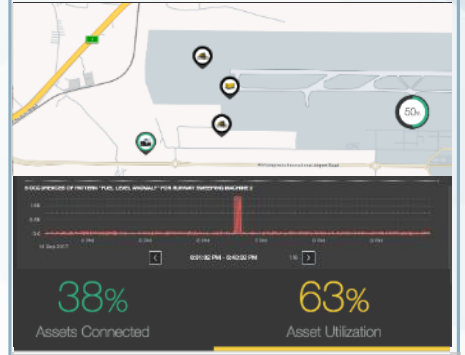
Monitor shipments, fleet vehicles, driver behavior & costs

Connected Worker



Enhance worker safety through monitoring of workers and environment

Service Monitoring for Connected Assets



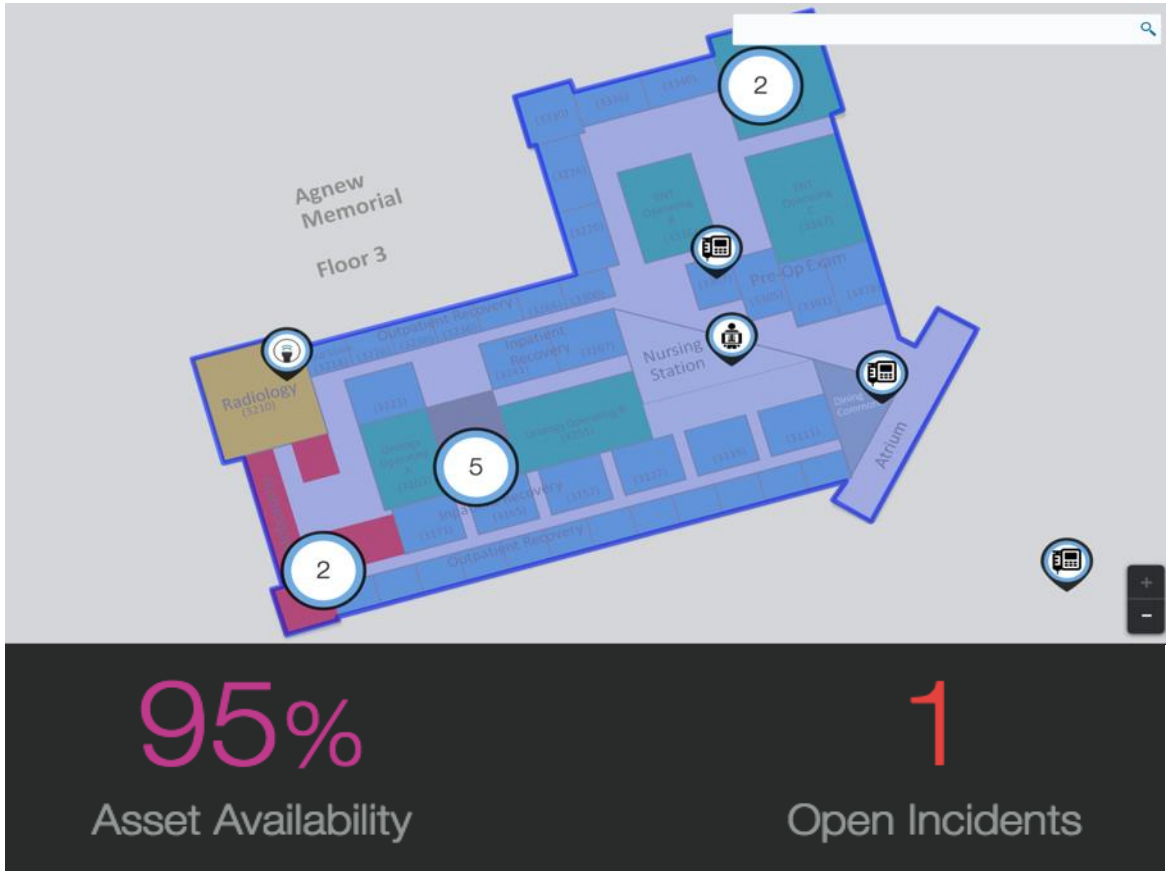
Automate asset monitoring and Customer Service to enhance customer experience

Internet of Things Cloud Enterprise (Platform)

Connect | Analyze | Integrate | Learn

IoT Asset Monitoring Cloud

For monitoring assets, their utilization, availability, and data from connected sensors



Location Tracking

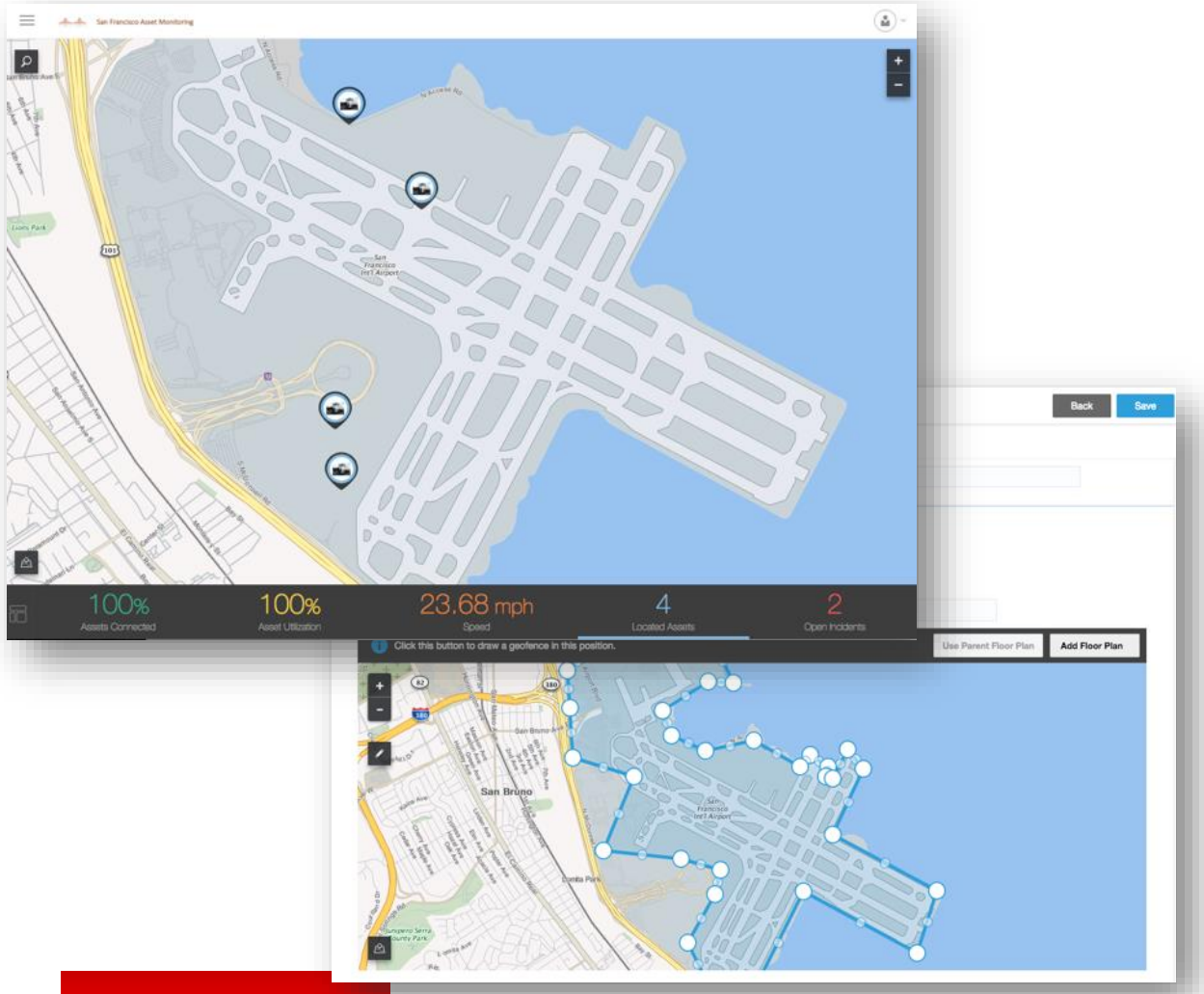
Asset Health

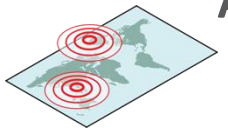
Asset Performance

Utilization

Key features/Capabilities

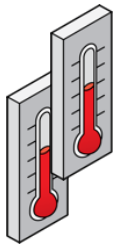
Unified, Real-time, Accurate Assets Visibility – Past, Current and Future





Accurate, up-to-the minute asset location

- Instant, real-time location of assets that are indoors or outdoors
- Geospatial analytics to monitor usage, theft, misuse and misplacement



Continuous monitoring of asset health

- Automatic detection of faults and abnormalities
- Utilization ranking for most and least used assets

Customized KPIs for asset performance

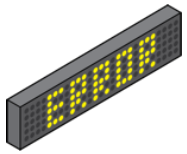
- No-code KPI editor for creating customized KPIs
- Rapid visualization of KPIs using built-in widgets

Key features/Capabilities

Unified, Real-time, Accurate Assets Visibility – Past, Current and Future

Predictive analytics for proactive maintenance

- Unsupervised machine learning using built-in algorithms to detect complex patterns in sensor data and predict asset behavior
- No-code method to allow business users to create predictive analytics customized for their business



Automated maintenance and service workflows

- Built-in & customizable integrations with maintenance management and service management systems cuts down issue response time and improves cross-functional collaboration

Industrial Robot Monitoring

Noble Plastics specializes in injection molding, decorating, assembly, and contract manufacturing services.

Challenges

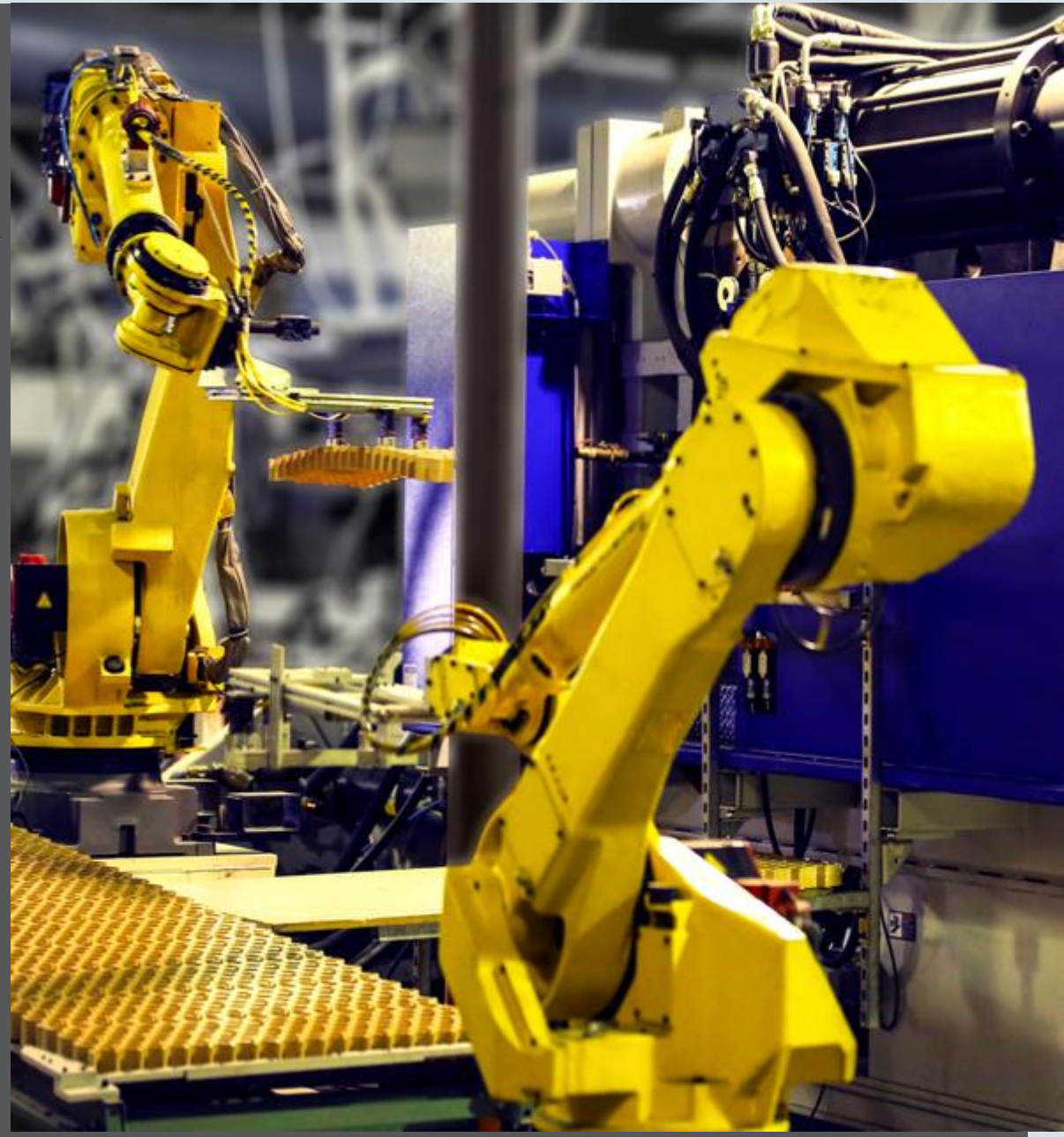
- Transform company from shoot-and-ship job shop
- Lack of visibility into robot driven injection molding process

Solution Components

- Oracle Asset Monitoring Cloud, Oracle Mobile Cloud
- FANUC Industrial Robots for pre and post production processes
- Oracle IoT Asset Monitoring cloud connects to FANUC industrial robot to monitor manufacturing cell cycle time
- Asset Monitoring Cloud analyzes streaming part counts, error status at real-time & sends real-time alerts to technician's mobile

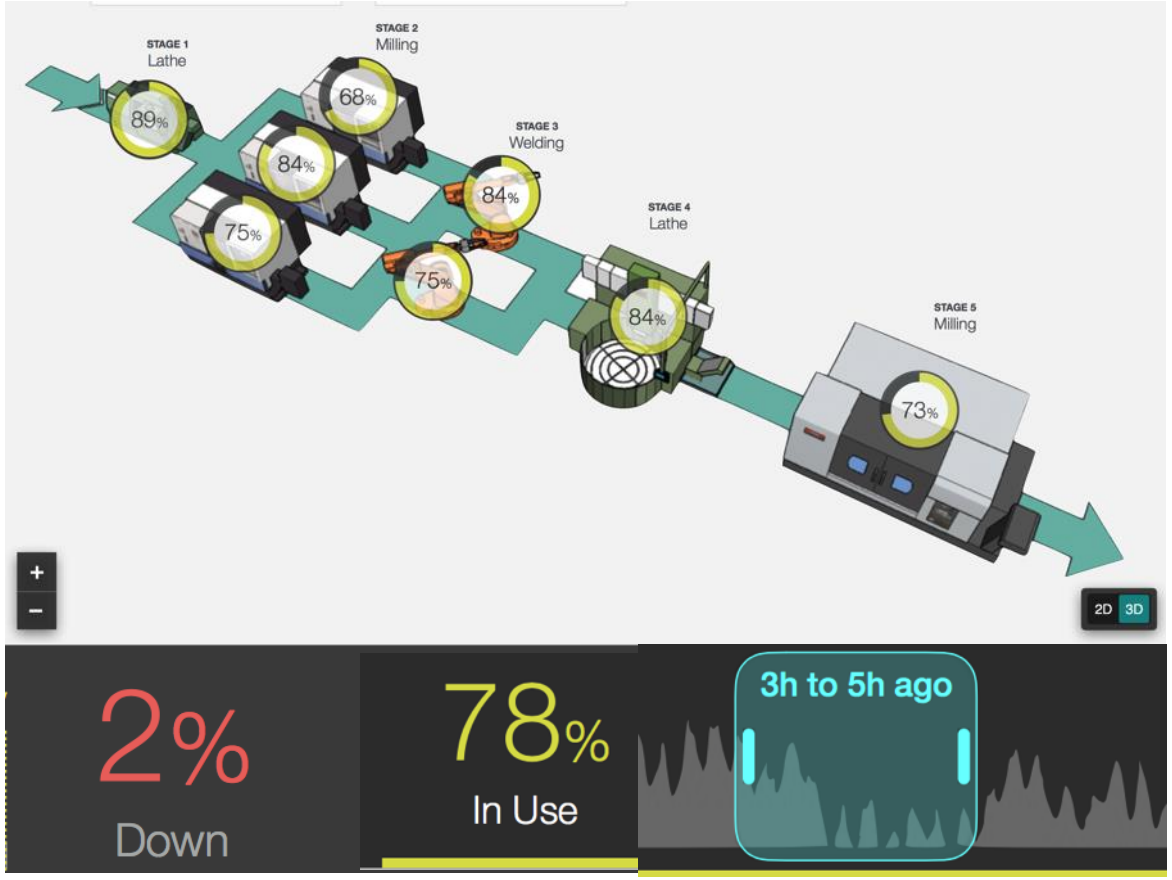
Benefit

- Eliminate the labor costs of manual intervention
- Immediate realization of value @ $15-$30/hour
- Began digital transformation from a job shop to innovative design and manufacturing company with focus on automation



IoT Production Monitoring Cloud

Manufacturing factory floor equipment monitoring and prognostics



Factory Monitoring

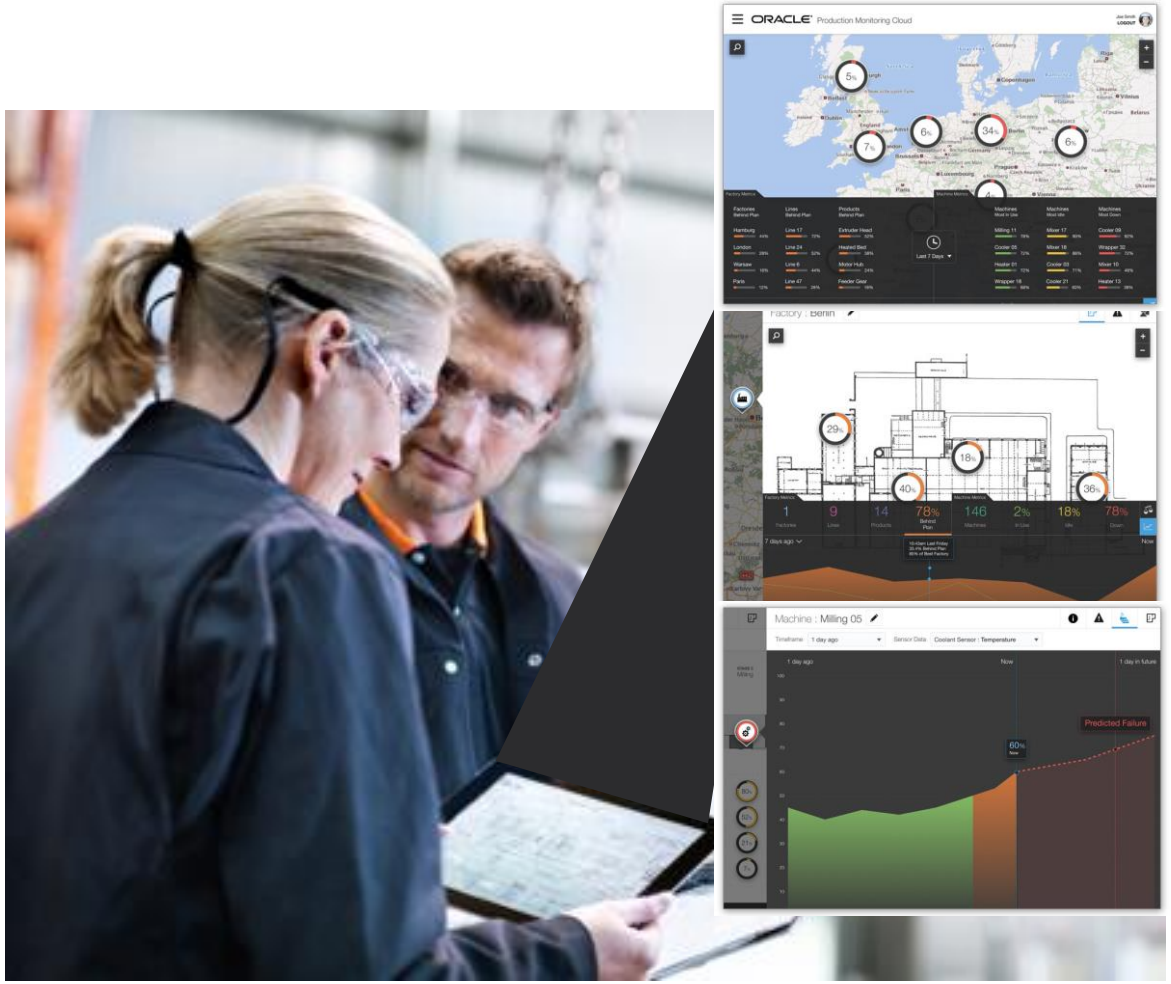
Production Line View

Predictive Algorithms

Maintenance

Key features/Capabilities

Real-Time Factory Operations Management | Predictive and Prescriptive Analytics



Connect and track real-time performance

- Connect to OPC-UA / historian / SCADA systems and manufacturing execution systems
- Built-in and customizable factory metrics

Compare and diagnose production stoppages

- Comparative and historical analytics of factory, product and machine metrics
- Production line and routing views to identify bottlenecks

Analyze and act on data driven decisions

- Out of the box anomaly detection to identify statistical and pattern anomalies
- Advanced ML/DL/AI methods for predicting future production performance

COSMOS Machinery

COSMOS Machinery specializes in Machinery Manufacturing for the Automotive Industry Sector

Challenges

- Improve the customer satisfaction. Their customer requires Cosmos to get the realtime Production data
- Improve the non-conformance issue visibility and corrective action response (CAR) for their Automotive TS16949 requirement

Solution Components

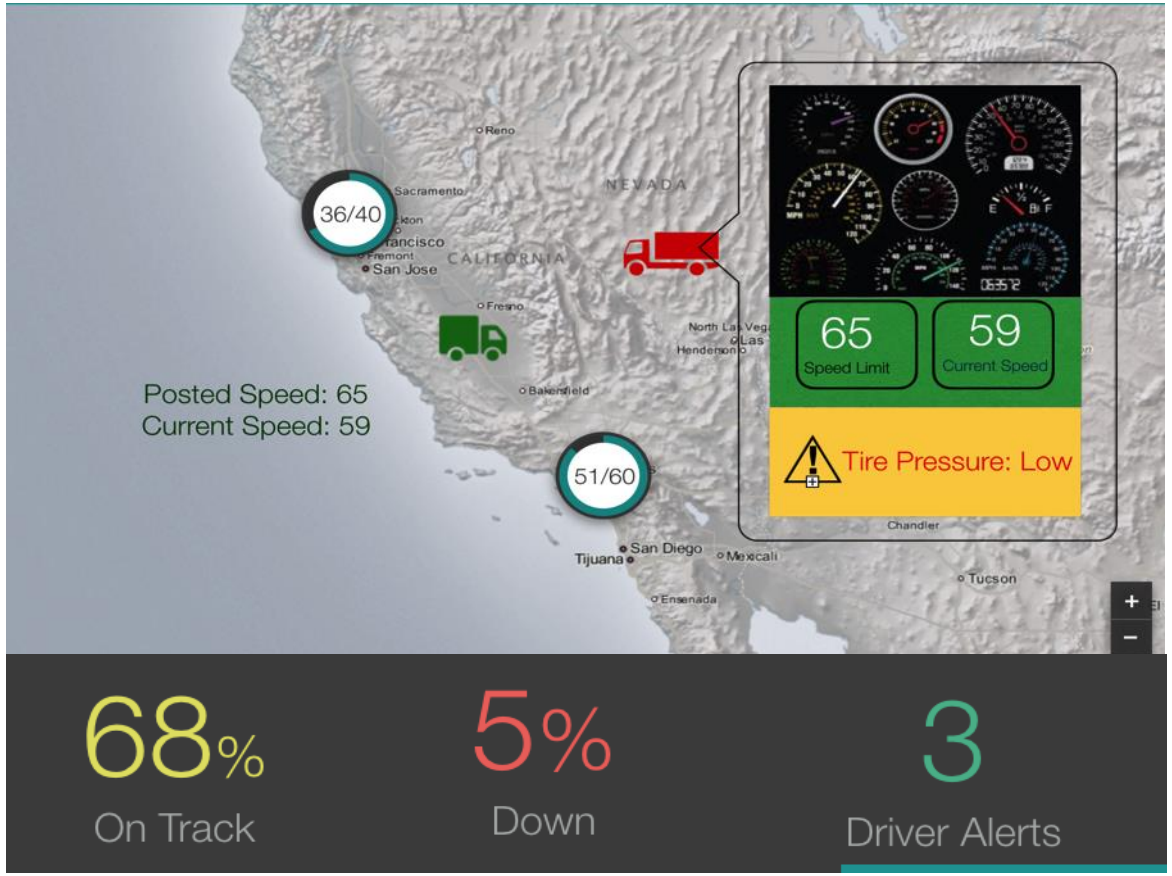
- Oracle IoT for Production Monitoring Cloud
- As they are Machinery Manufacturer, they have the experts on handling the technical side of the sensors of the machine. They just don't have the software to analyze the sensor data, provide real time alert and integrated with downstream system.

Benefit

- Oracle IOT Production Monitoring Cloud is a perfect match to them. We provide the IOT software to them, then they Integrate with their sensors in the machine to capture the realtime quality data

IoT Fleet Monitoring Cloud

For medium sized business who have fleets of vehicles (trucks, buses, maintenance vehicles, delivery vehicles)



Connected Fleet

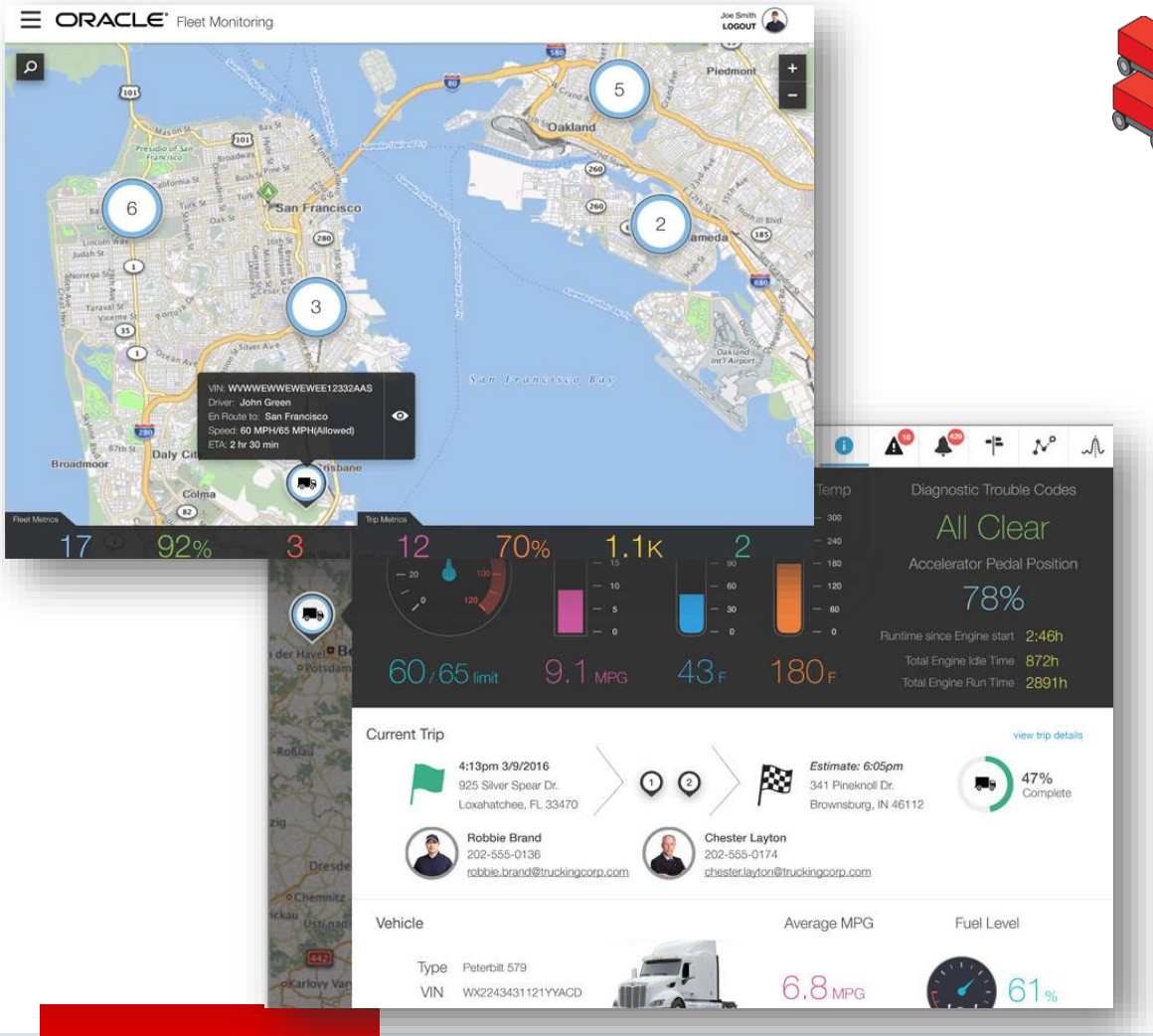
Location Tracking

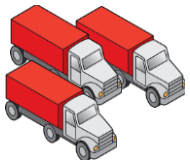
Utilization

Fleet Performance

Key features/Capabilities

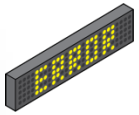
Unified, Real-time, Accurate Assets Visibility – Past, Current and Future





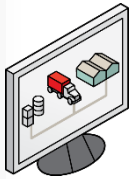
Accurate, up-to-the minute vehicle data

- Get real-time operational data directly from vehicles using standard vehicle diagnostics interfaces
- User driver's mobile phone for location of vehicles without data loggers
- Review complete details of current/past trips



Proactive handling of exceptions

- Facilitate automatic notifications for changes in ETA for customers to eliminate repeated effort for track & trace of shipments
- Automatically detect vehicle malfunctions and analyze telemetry data to predict faults
- Monitor driving behavior for speeding & other poor driving behavior patterns



Pre-built Digital Thread with OTM

- Pre-built integration with Oracle Transportation Mgmt. allows automatic import of shipments data and reporting of shipment status and exceptions

Fleet Monitoring

Impulsora Sahuayo is the leading distribution company in Mexico.

Challenges

- Improve visibility in health of fleet
- Know exactly how much fuel a truck spend in a trip or in a day

Solution Components

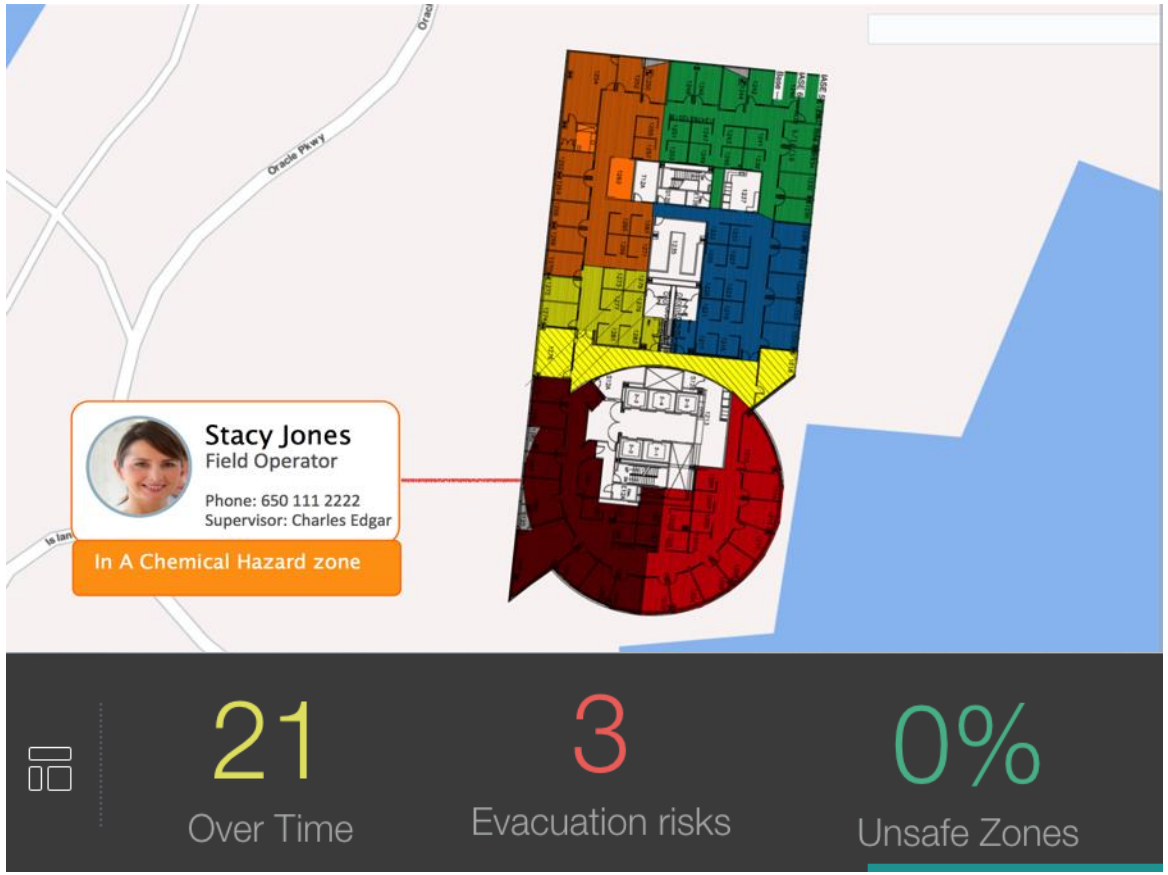
- Oracle Fleet Monitoring Cloud, Oracle Transportation Management
- IoT Fleet Monitoring app to track vehicle health, location
- Planned routes from OTM are pushed to IoT and the driver gets them directly in IoT app
- At the end of each trip, IoT pushes back to OTM the amount of fuel that was consumed

Expected Benefit

- Improved profitability with reduced cost of servicing tank trucks
- Intelligently automate order conversion in to detailed dispatch plans for drivers

IoT Connected Worker Cloud

For tracking employees in Mining industry, Engineering and Construction industry



Connected Workers

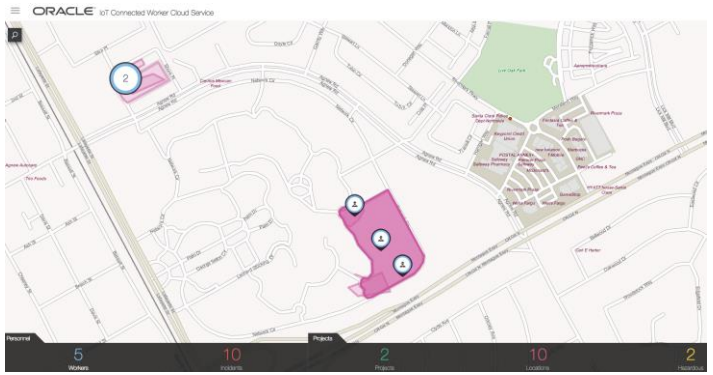
Employee Safety

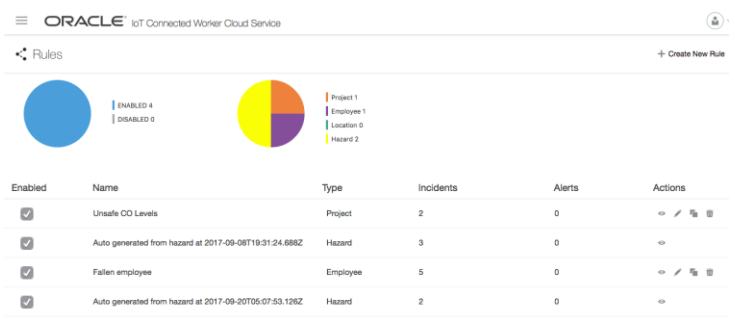
Location Tracking

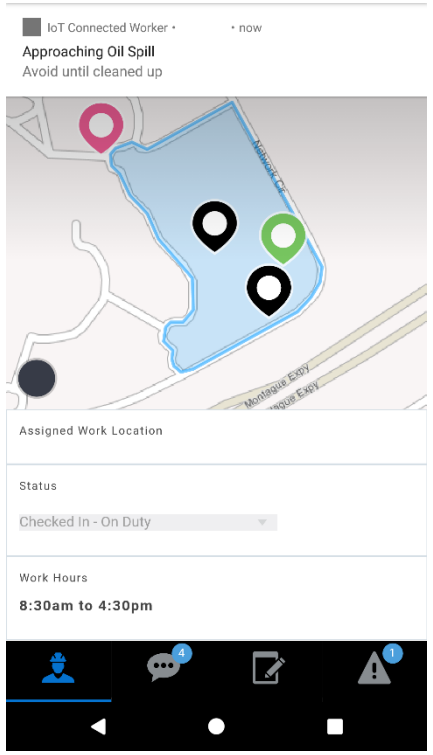
Performance

Key features/Capabilities

Enabling Proactive Worker Safety







Real-time worker location

- Identify worker position by project and site location

Monitor work place to prevent accidents

- Detect proximity of worker to hazards and prevent accidents
- Monitor environment

Incident Analytics

- Root Cause
- Correlation Analysis

Safety Policy Enforcement

- Rules-based actions on real-time sensor data

Summary


ORACLE®